

CLAIMS

1. A diversity receiving apparatus that separately weights reception signals of a plurality of reception systems using combining coefficients based on a respective amplitude component of each reception signal, combines the weighted reception signals, extracts symbol sections in the combined reception signals, and generates a clock for detecting symbols,

the diversity receiving apparatus comprising:

judging means for judging whether every combining coefficient is below a predetermined threshold;

multiplying means for uniformly multiplying every combining coefficient when the judging means judges that every combining coefficient is below the predetermined threshold; and

combining means for combining the reception signals using the multiplied combining coefficients.

2. The diversity receiving apparatus of Claim 1,

wherein the combining coefficients are one of an received signal strength for each reception system and a parameter showing a reliability of the reception signal obtained by each reception system.

3. The diversity receiving apparatus of Claim 2,

wherein the multiplying means multiplies every combining coefficient by a constant when the judging means judges that every combining coefficient is below the predetermined threshold.

4. The diversity receiving apparatus of Claim 3,
wherein the constant is related to a result of dividing a maximum value for the combining coefficients by the threshold.

5. The diversity receiving apparatus of Claim 4,
wherein each combining coefficient is expressed using a predetermined number of bits,
the constant being 2^n and the predetermined threshold being found by dividing a maximum value that can be expressed using the predetermined number of bits by 2^n , where $1 \leq n < \text{the predetermined number of bits}$.

~~6.~~ A diversity receiving apparatus that separately weights reception signals of a plurality of reception systems using combining coefficients based on a respective amplitude component of each reception signal, combines the weighted reception signals, extracts symbol sections in the combined reception signals, and generates a clock for detecting symbols,
the diversity receiving apparatus comprising:

judging means for judging whether every combining coefficient is below a predetermined threshold;

multiplying means for uniformly multiplying every combining coefficient when the judging means judges that every combining coefficient is below the predetermined threshold;

combining means for combining the reception signals using the multiplied combining coefficients; and

generating means for generating a clock that is synchronized with the reception signals of the reception systems using the reception signals combined by the combining means.

7. The diversity receiving apparatus of Claim 6,

wherein the combining coefficients are one of an received signal strength for each reception system and a parameter showing a reliability of the reception signal obtained by each reception system.

8. The diversity receiving apparatus of Claim 7,

wherein the multiplying means multiplies every combining coefficient by a constant when the judging means judges that every combining coefficient is below the predetermined threshold.

9. The diversity receiving apparatus of Claim 8,

wherein the constant is related to a result of
dividing a maximum value for the combining coefficients
by the threshold.

10. The diversity receiving apparatus of Claim 9,
wherein each combining coefficient is expressed
using a predetermined number of bits,
the constant being 2^n and the predetermined
threshold being found by dividing a maximum value that
can be expressed using the predetermined number of bits
by 2^n , where $1 \leq n < \text{the predetermined number of bits}$.

~~11.~~ A diversity receiving apparatus that separately
weights reception signals of a plurality of reception
systems using combining coefficients based on a
respective amplitude component of each reception signal,
combines the weighted reception signals, and generates a
clock for detecting symbols based on the combined
reception signals,

the diversity receiving apparatus comprising:
judging means for judging whether every combining
coefficient is below a predetermined threshold;

multiplying means for doubling every combining
coefficient when the judging means judges that every
combining coefficient is below the predetermined
threshold;

control means for repeatedly activating the
judging means and multiplying means until the judging
means judges that at least one of the combining
coefficients is no longer below the predetermined
threshold;

combining means for combining the reception
signals using the multiplied combining coefficients when
the judging means judges that at least one of the
combining coefficients is no longer below the
predetermined threshold; and

generating means for generating a clock that is
synchronized with the reception signals of the plurality
of reception systems using the reception signals combined
by the combining means.

12. The diversity receiving apparatus of Claim 11,

wherein the combining coefficients are one of an
received signal strength for each reception system and a
parameter showing a reliability of the reception signal
obtained by each reception system.

~~13.~~ A clock generating circuit for use by a diversity
receiving apparatus that separately weights reception
signals of a plurality of reception systems using
combining coefficients based on a respective amplitude
component of each reception signal and combines the

6 weighted reception signals,

7 the clock generating circuit comprising:

8 judging means for judging whether every combining
9 coefficient is below a predetermined threshold;

10 multiplying means for multiplying every combining
11 coefficient when the judging means judges that every
12 combining coefficient is below the predetermined
13 threshold;

14 combining means for combining the reception
15 signals using the multiplied combining coefficients; and

16 generating means for generating a clock that is
17 synchronized with the reception signals of the plurality
18 of reception systems using the reception signals combined
19 by the combining means.